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10/034,993	12/28/2001	William Bedingham	56918US002	1113

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EXAMINER

SODERQUIST, ARLEN

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,993

Applicant(s)

BEDINGHAM ET AL.

Examiner

Arlen Soderquist

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 and 52 is/are allowed.
- 6) ☒ Claim(s) 1-18, 26, 31, 34-51 and 53-58 is/are rejected.
- 7) ☒ Claim(s) 19-24, 27-30, 32 and 33 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8-13-02, 3-17-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the structure of claims 19, 21 and 47 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: examiner was not able to find antecedent basis for the language of claims 19, 21 and 47 in the specification.

3. Claims 2-7, 26, 31, 35-51 and 53-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 2, 26 and 35 it is not clear what constitutes the identifying the base plate to the system controller. Examples of possible interpretations are that the base plate is connected (identified as connected) to the drive mechanism or the base plate is identified as one of a plurality of different possible base plates. The scope of claim 1 is a single base plate so for examination purposes the first interpretation will be used for examination purposes. A plurality of different base plates would be required for the second interpretation to be examined. Apparatus claims 35, 38-39, 45, 47 and 49-51 are dependent on method claim 33. These claims are being treated for examination purposes by examiner as if dependent from apparatus claim 34. In claims 36-37, "the identification indicia" does not have proper antecedent

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basis in claim 34. These claims will be treated as if dependent from claim 35 for examination purposes. In claims 40-43 and 48, "the electrically powered device" does not have antecedent basis in claims 38 or 46. For examination purposes, these claims will be treated as dependent from claims 39 or 47 respectively. In claims 31, 44 and 58, "the base plate microprocessor" does not have antecedent basis. These claims will be treated as if dependent from claims 30, 43 or 57 respectively for examination purposes. In claim 46, "the temperature sensor" does not have antecedent basis. The claim will be treated as if dependent from claim 45 for examination purposes. It is noted that several of the claims are incorrectly dependent. It appears that at some point prior to submitting the instant application, new claims were added and although the claims were renumbered, the dependencies were not corrected to reflect the renumbering. Since examiner cannot determine if this happened for claims 26-30 and 53-58, the claims will be respectively treated as if dependent from claims 24 or 51 as listed. It may be appropriate for applicant to check if the claims are dependent from the claims that applicant originally intended.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 8-18, 34, 37-46, 51 and 53-58 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Meyer (US 4,933,146). In the figures and associated discussion of the patent Meyer teaches a temperature control apparatus for controlling the temperature of a plurality of cuvettes consisting of an annular sealed chamber containing a refrigerant, means fixed to the sealed chamber for receiving the sample cuvettes, a heater in thermal contact with the sealed chamber, and a temperature sensor in thermal contact with the sealed chamber. The sealed chamber may include a plurality of thermally conductive posts fixed to the chamber, the spacing between adjacent ones of the posts being adapted to receive the sample cuvettes. Columns 3-4 teach the temperature control apparatus (10, base plate) includes a ring assembly (12) fixed to a hub assembly (14) by means of three cap screws (16). The ring assembly of figures 1-3 includes an upper portion (18) and a lower annular chamber (20). The annular chamber includes a generally U-shaped annular ring (22) and an annular cover (24). The open

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portion of the U-shaped annular ring is directed downwardly as seen in the figures. The annular cover is fixed to the ring to form an enclosed void (26). A plurality of upwardly extending thermally conductive posts (28) are fixed to the annular chamber. The annular ring, cover and posts are preferably formed of a heat conductive material such as aluminum alloy or copper. The posts define spaces (30) adapted to snugly receive glass or clear plastic cuvettes (32) having essentially a square cross section and provide good physical contact between the cuvettes, posts and the annular ring. An outer wall (40) of the annular ring includes a reduced lower section (42) defining a ring-shaped circular surface which receives a heating element (44). An inner wall (46) of the annular ring includes a reduced middle portion (48) and a projection (50) which together cooperate to define a ring-shaped circular surface or area which receives a temperature sensor (52). An alternative placement of a heater (76) and temperature sensor (78) is shown in figure 4. Column 5, lines 15-35 teach that electrical connections for both the heater and the temperature sensor. For the embodiment of figure 4, the electrical connection is provided by means of feed-throughs illustrated typically at 80. A wire (88) connects the feed-through to temperature control circuitry through suitable slip-ring connectors between the temperature control apparatus and stationary structure (not shown) associated therewith. In the embodiment of figures 1-3, a flat flexible conductor strip (90) connects the heating element and temperature sensor to a circuit board (92, microprocessor) proximate the center of the temperature control apparatus. The circuit board is used to connect the conductor strip through suitable slip-ring connectors (not shown) to a temperature control circuit (98). Figure 5 shows how the temperature control works. Also relevant to the current claims is column 6 lines 7-9 teaching the apparatus mounted to a rotatable shaft and connected to the temperature controller circuit.

6. Claims 1-2, 8-12 17-18, 34, 38-42 and 44-45 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bauer (US 4,030,834) or Bullock (US 1,123,173). In each case the references have a rotatable base plate adapted to receive a sample processing device. The base is mounted on a drive system by a slip-ring structure that is used for providing power and communication between a heater and temperature sensor mounted on the base plate and a controller.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 3-7 and 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer as applied to claims 2 and 34 above, and further in view of Edelmann (US 4,456,581) or Lucas (US 4,111,304) and Barr (US 4,252,538) or Ulrich (US 6,375,898) and Brown (US 5,792,372). Meyer does not teach identifying the base plate.

In the patent Edelmann teaches a centrifugal analyzer rotor unit and insertable elements. The rotor comprises a rotatably driven circular rotor base; and a rotor head comprising a plurality of insert elements each having at least one chamber sample for the reception of a sample liquid, at least one measuring chamber radially outwardly from the associated sample chamber for the measurement of characteristic parameters for the detection of components of the sample, each insert element being releasably mounted on the rotor base at any one of a plurality of different selectable angular positions wherein the insert element is positionally stable when the rotor base is rotating. Column 7, line 45 to column 8, line 2 discusses the thermostatic control of the rotor. Both the rotor base (12) and the insert elements (16,18,20,21, 22) are provided mechanically readable coding means (24,26) for identification purposes.

In the patent Lucas teaches a cartridge having a plurality of distinct cells and a support to which the cells are connected so as to be disposed around a common center. At least one reference mark is placed on the package to establish the contents of the cell in a determined order in one or more sequences and at least one second mark is provided for determining the position of the cells with respect to a fixed point. In use, the marks are read by a reading device and, depending upon a selection which is made, a particular cell is perforated to allow the contents

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thereof to be distributed. The marks, particularly when they are in the form of optical inscriptions, perforations, notches, bosses, magnetic inscriptions, etc. are susceptible of being detected and employed in an apparatus or an arrangement receiving the package, the function of the said apparatus or arrangement being subordinated to the marks. Thus, marks, such as perforations, can be disposed on concentric circles 17, 18 having their center at 0. By turning the package around an axis passing through 0 and perpendicular to the flat support (3), the marks disposed on the circles (17,18) control the diverse functions of the apparatus or the arrangement receiving the package. Columns 7-8 show one way in which this is accomplished in that a perforator (25) is controlled by a series of holes (60) adapted to cooperate with one or more actuators (61) and switches (62) to cause it to move as the cartridge is rotated. This allows the liquids to be dispensed in any given sequence and order.

In the patent Barr teaches a dual cavity substrate having a sample compartment for selectively discharging the fluid under test is rotatably mounted in a holder. Equipments for various substrate surface preparation procedures as well as for washing, lysing and optical inspection procedures are also described. A method for conducting various tests performable by the apparatus is disclosed. Indicia for identification purposes are placed upon a flange (16) or tab (26) of the substrate (10). The indicia may take the form of a bar code or similar mechanically, electrically or optically readable identification indicia to identify each substrate. A sensor (202) may be attached to a frame (204) in a location commensurate with the position of

the indicia upon either the flange or tab such that as the substrate rotates, the indicia will travel past the sensor at each revolution. The information sensed or detected by the sensor is conveyed to appropriate deciphering equipment by a conduit (206). The sensor may be an optical detector generating optical signals that are conveyed to deciphering equipment by a bundle of fiber optic elements disposed within or forming the conduit.

In the patent Ulrich teaches an analysis system, in particular for medical analysis work for carrying out clinical-chemical and immunological analyses, comprises an analysis appliance and at least one system-reagent carrier. The system-reagent carrier has at least one cuvette pre-filled with a test-specific, preformulated, wet-chemical system reagent, as well as the measuring cuvette. It is particularly advantageous if the system-reagent carrier or the measuring cuvettes are in each case provided with a manufacturer identification coding or a manufacturer

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identification code, and if a recognition and decoding device is provided for this coding or code, the reading device advantageously being designed so that it can also read the manufacturer identification coding. In this way, it is possible to prevent system-reagent carriers or measuring cuvettes unsuitable for this analysis system from being used, since under certain circumstances this could lead to incorrect analysis results, and consequently the reliability of the analysis is increased further. Suitable coding may, for example, be effected mechanically (key-lock principle), electrically, electronically or optically, in which case the coding may also comprise an element protected in a different way, such as for example a trademark or a protected design element.

In the patent Brown teaches centrifugal processing systems and apparatus. Columns 27-32 discuss an optical contactless interface control system (234) for transmitting data between moving and stationary elements. In particular column 28, lines 43-49 teach the system further includes a data link (278) for transmitting light intensity signals from the rotating viewing head (268) to an interface control circuit (270) on the stationary frame of the centrifuge. In the illustrated embodiment, the data link is optical in nature. Alternatively, slip rings could be used to transmit the light intensity signals as voltage or current signals. Column 32, lines 1-3 teach that this type of "connectionless" system for transmitting data between moving and stationary elements would be applicable for use for all sorts of real time control functions, not just interface control.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate any of the various optical, mechanical or electrical indicia or coding means as taught by of Edelmann, Lucas, Barr or Ulrich onto the base plate of Meyer because of the ability to identify the component and control the system processing as taught by Edelmann, Lucas, Barr or Ulrich. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a contactless data link as taught by Brown in the Meyer device as an alternative of the slip-ring of Meyer because of its recognized ability to transmit data in real time as taught by Brown.

9. Claims 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer as applied to claims 34 above, and further in view of Schultz (US 4,632,908). Meyer does not teach an electromagnetic radiation means for heating the device.

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In the patent Schultz teaches a heating system for rotating members that includes a strobe means capable of emitting radiant energy that is positioned to radiate energy on to an article on the rotating member. The article uses a temperature sensitive means to measure the temperature and control the application of the radiant energy from the strobe means. Column 1 discusses chemical testing methods in which a sample processor card is mounted on a rotating plate (centrifuge) as the analysis occurs. In the process the temperature at which the reaction between the sample and reagent is carried out should be controlled to achieve accurate results, necessitating the heating of the reagent and/or sample to insure that they are within a relatively narrow temperature range. That heating operation is complex by reason of the fact that the centrifuge plate typically makes one revolution every 30 milliseconds, and thus supplying heating to the rapidly rotating card represents a difficult task. In addition, the centrifuge plate frequently carries a number of different cards at the same time, each of which must be selectively heated from differing starting temperatures. It is not uncommon for the centrifuge plate to carry a number of cards, each of which is at a different temperature and all of which must be brought to the optimum temperature within a short period of time, typically one to two minutes. The strobe means system is taught as overcoming these difficulties in order to provide heat to the sample processors.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the strobe means for heating article on a rotating plate into the Meyer device because of the ability to heat individual articles on the rotating plate in a relatively short time as taught by Schultz.

10. Claims 25 and 52 are allowed. The art of record fails to teach or fairly suggest the method or structure found in these claims. In particular using the generator coils on the base in conjunction with a magnetic field proximate to the base to generate electricity to provide power to an electrically powered device on the base. This is to be distinguished from devices as taught by Chisholm (US 3,912,799), Gordon (US 6,593,143) and Leis (US 4,498,896), which use the magnetic field proximate to a rotating base to generate eddy currents that heat the base.

11. Claims 19-24, 26-33 and 47-48 are dependent from a rejected base claim, but would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and/or to include all of the limitations of the base claim and any

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intervening claims. The art of record fails to teach or fairly suggest the claims for the reason above or because of the photovoltaic cell on the base providing electrical power to an electrically powered device on the base.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additionally cited art relates to rotating base members.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose current telephone number is (571) 272-1265 as a result of the examiner moving to the new USPTO location. The examiner's schedule is variable between the hours of about 5:30 AM to about 5:00 PM on Monday through Thursday and alternate Fridays.

A general phone number for the organization to which this application is assigned is (571) 272-1700. The fax phone number to file official papers for this application or proceeding is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



June 26, 2004

ARLEN SODERQUIST
PRIMARY EXAMINER